

## **REMARKS**

### **I. Introduction**

Upon entry of the present amendment, claims 1-5 and 7-23 will remain pending in this application. Claims 1, 2, and 13 have been amended to clarify certain aspects of the invention. Based on the following remarks, Applicants respectfully request reconsideration and allowance of the pending claims.

### **II. 35 U.S.C. § 112**

The Examiner has rejected claim 13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner objects to the use of the word “homogenized,” stating that there is not support in the application for a heat treatment. Applicants continue to fail to understand the Examiner’s position with this rejection. Claim 13 depends from claim 1, which specifically recites a heat treatment. Additionally, homogenization of the powder is specifically described by the specification on the first and third paragraphs of page 6 and the fifth full paragraph of page 11. In an abundance of cooperation and without acquiescing to the Examiner’s rejection or his position with respect to the meaning of homogenized, Applicants have clarified claim 13 to further recite “by blending.” Support is as discussed above. To the extent that this rejection is maintained, clarification is respectfully requested.

The Examiner has also objected to claim 1 and 2 which recite “based on.” The Examiner’s interpretation is correct—the claims use “comprising” terminology meaning that additional elements may be present. But in the interest of clarifying the claim and using standard claim terminology, “based on” has been replaced with “comprising.”

Regarding the Examiner's rejection that the claims do not recite the starting material as being magnetic scrap material, Applicants have removed that recitation from claim 1; in claim 2, the material *is* recited as magnetic scrap material in the preamble as well as in the body of the claim, see claim 2, lines 4-5.

Regarding the Examiner's objection to the use of "and/or" in claim 1, appropriate correction has been made.

The Examiner has also rejected claims 1-23 under 35 U.S.C. § 112, first paragraph, as based on a disclosure which is not enabling. The Examiner states that the use of magnetic scrap material is disclosed as critical or essential to the practice of the invention, but not included in the claims. Applicants respectfully traverse the Examiner's position. One embodiment of the invention is directed to using a starting material that is magnetic scrap material, which is recited in claim 2. Another embodiment of the invention is directed to using a starting material that is a magnetic material with an anisotropic orientation and an average grain size of less than 1 mm, which is recited in claim 1 (and supported at pages 3-4, which do not mention the use of scrap material as critical or essential to the invention).

Specifically, although magnetic scrap material is described as a particular starting material that is easy to process for use and that meets these conditions, it is not described as the *only* possible starting material. The invention is not based only on the use of scrap metal as the starting material for the claimed process in order to obtain just as good a material as when starting from new materials. Instead, it teaches a way to improve the quality of an anisotropic magnetic powder obtained by a HDDR process by providing a starting material with certain properties as defined in present claim 1 – one feature of which is the use of a

magnetically anisotropic starting material. Although typical magnetic scrap metal may exhibit these properties, the use of magnetic scrap is not essential. Independent claim 1 recites specific properties, and independent claim 2 recited the specific example of using magnetic scrap material. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

#### **IV. 35 U.S.C. § 103**

##### **A. Takeshita in view of Yajima**

The Examiner has rejected claims 1-5 and 7-23 under 35 U.S.C. § 103(a) as being unpatentable over Takeshita (U.S. Patent No. 5,110,374) in view of Yajima (U.S. Patent No. 5,049,208). The Examiner's position is that Takeshita teaches the claimed invention, but admits that Takeshita fails to teach the crystal grain size of the R-TM-B alloy and the use of magnetic scrap material. The Examiner submits, however, that Yajima teaches a R-TM-B permanent magnet having a crystal grain size of about 0.01 to 3 microns or 10 microns, depending on the method of manufacture. The Examiner's position is that it would have been obvious to modify Takeshita's R-TM-B alloy with Yajima's size of less than 10 microns in order to arrive at the claimed invention. Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

Neither of the cited references discloses use of a starting material with the properties as recited in claim 1 to improve the product obtained by a HDDR process. The properties that the Yajima patent teaches relate to a permanent magnet with a defined grain structure obtained by a special process starting from a molten alloy. The magnet is the final product, the molten alloy the starting product. *See e.g.*, Yajima, col. 8, lines 56-60; col. 9. Yajima

does not disclose that the alloy used as the starting product has the claimed properties. The average grain size referred to by the Examiner at col. 7, lines 41-53 and col. 2, lines 36-61 both refer to the grain size of the *permanent magnet*, i.e., the final product, *not the starting material* as claimed.

Takeshita discloses a method for producing a magnetic powder using a rare earth-iron-boron alloy material. Takeshita does not disclose the manufacture of a permanent magnet (i.e. the final product of Yajima's process), or the use of a molten alloy as its starting material. There is thus no reason to assume that a rare earth-iron-boron alloy material used as a starting material for the production of a magnetic powder according to Takeshita should have the properties of a product obtained from processing a starting material made of a similar alloy (although molten) in a way required to obtain a permanent magnet as taught by Yajima. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

**B. Takeshita in view of Kim or Kaneko further in view of Yajima**

The Examiner has rejected claims 1-5 and 7-23 under 35 U.S.C. § 103(a) as being unpatentable over Takeshita in view of either Kim (U.S. Patent No. 5,091,020) or Kaneko (U.S. Patent No. 6,149,861) in view of Yajima. The Examiner's position is that Takeshita teaches new rare earth-transition metal-boron alloy as the starting material in an HDDR process, but admits that Takeshita and Yajima fail to teach using scrap rare earth-transition metal-boron alloy. The Examiner submits, however, that Kim and Kaneko teach using scrap rare earth-transition metal-boron alloy in place of new rare earth-transition metal-boron alloy. The Examiner's position is that it would have been obvious to substitute Takeshita's

new rare earth-transition metal-boron alloy with Kim and Kaneko's scrap rare earth-transition metal-boron alloy in order to arrive at the claimed invention. Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

These references teach the use of scrap as a starting material. In Kim and Kaneko, the scrap used as a starting material is ground to a very small particle size (*see, e.g.*, col. 2, line 47 of Kim, which discloses grinding to a particle size of 1 to 4  $\mu\text{m}$ , and col. 5, line 56 of Kaneko, which discloses grinding to a particle size of about 3  $\mu\text{m}$ ). This processing step actually reduces the anisotropy of the starting material used at the beginning of the HDDR process. Both Kim and Kaneko aim at an optimized use of raw materials contained in the scrap material, and thus seek to produce cheaper sintered magnets. In order to achieve this, it is advantageous to reduce the particle size first.

By contrast, according to the present invention, the anisotropy of the starting material (which can, for example, be obtained by use of scrap magnets) is used to increase the quality of the final product. Applicants thus do not seek to reduce the particle size of the starting material as described by Kim and Kaneko. (*See, e.g.*, claim 15 where less than 10 % of the particles are smaller than 32  $\mu\text{m}$  in size, evidencing that the present invention teaches away from the prior art that requires grinding to particle sizes between 1 and 4  $\mu\text{m}$  or 3  $\mu\text{m}$ , before the actual HDDR process is started.)

Additionally, without acquiescing to the proper combinability of these references, Applicants submit that for at least the above discussed reasons related to the Takeshita and Yajima patents, even if the Kim and Kaneko patents are combined with Takeshita and

Yajima as suggested, the claimed invention would not result. It is thus respectfully requested that this rejection be reconsidered and withdrawn.

### **CONCLUSION**

For at least the above reasons, Applicants respectfully request allowance of the pending claims and issuance of a patent containing these claims in due course. If the Examiner believes there are any issues that can be resolved via a telephone conference, or if there are any informalities that can be corrected by an Examiner's amendment, he is invited to contact the undersigned.

Respectfully submitted,

/Kristin M. Crall 46,895/

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Kristin M. Crall  
Reg. No. 46,895

KILPATRICK STOCKTON LLP  
1100 Peachtree Street  
Suite 2800  
Atlanta, Georgia, 30309-4530  
404.815.6147